Notable Grand Rounds
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Michael & Marian Ilitch
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DMC-ACC PATIENT SAFETY PROGRAM

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About Notable Grand Rounds

These assembled papers are edited transcripts of didactic lectures given by mainly senior residents, but also some distinguished attending and guests, at the Grand Rounds of the Michael and Marian Ilitch Department of Surgery at the Wayne State University School of Medicine.

Every week, approximately 50 faculty attending surgeons and surgical residents meet to conduct postmortems on cases that did not go well. That “Mortality and Morbidity” conference is followed immediately by Grand Rounds.

This collection is not intended as a scholarly journal, but in a significant way it is a peer reviewed publication by virtue of the fact that every presentation is examined in great detail by those 50 or so surgeons.

It serves to honor the presenters for their effort, to potentially serve as first draft for an article for submission to a medical journal, to let residents and potential residents see the high standard achieved by their peers and expected of them, and by no means least, to contribute to better patient care.

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DMC-ACC Patient Safety Program

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Introduction

This paper outlines the key concepts, methodologies, and cultural imperatives shaping the patient safety and quality improvement efforts at the Adult Central Campus (ACC) of the Detroit Medical Center (DMC). The discussion centers on how healthcare providers—particularly surgeons—can support a culture of safety, improve communication, and understand root cause analysis (RCA) and systems-based error prevention strategies. The emphasis is on systems and human factors, moving beyond blame and toward continuous improvement.

Building a Culture of Safety

A strong culture of safety forms the foundation of quality care in hospitals. At its core, safety requires trust—trust between clinicians and families, physicians and nurses, and among all members of the healthcare team. Without trust, the structure built atop this foundation collapses. At the DMC, significant progress has been made, but challenges remain in strengthening this trust through consistent teamwork and communication.

The concept of safety must be grounded in reliability science. Hospitals that embrace its principles enjoy a competitive advantage through a demonstrable reduction in preventable harm. Reducing such harm also has direct implications for malpractice liability, a particularly acute concern in high-litigation states such as Michigan. Although perfection is unattainable, the focus remains on eliminating harm that could have been prevented through better systems design.

The Role of Reporting Systems

At the DMC, the Midas system (soon transitioning to RL6) is the primary event reporting tool. Staff are encouraged to report not only actual safety events but also near misses, using Midas. These reports feed into a centralized review process that enables institutional learning and process redesign. The success of this system depends on participation from all levels of care, and it is essential to understand that reporting is not punitive—it is a critical tool for improving system design.

From Blame to Systems Thinking

Healthcare institutions often evolve along a continuum from a culture of blame and shame to one of shared responsibility and learning. Blame focuses on individual error; safety culture focuses on process. The shift requires a fundamental reframing: rather than asking "Who did it?" the essential question becomes, "What in the process allowed this to happen?"

The distinction is critical. Low performers will exist in any field, but if well-designed systems are in place, they should prevent even marginal players from causing harm. The goal is to create processes so robust that they protect the patient despite individual variability in performance. This approach reduces fear and fosters engagement.

Learning from Adverse Events

In a safety-focused culture, every adverse event, injury, or unexpected death must be treated as a learning opportunity. The focus should not be on the person involved but on the process. Was the approach evidence-based? Were safety protocols followed? Was the technology used optimally? These are the kinds of questions that drive improvement.

High-profile safety failures, such as the tragic death of Josie King—a young child who died of dehydration and narcotic overdose at a leading pediatric hospital, despite the pleas of Josie's mother to the doctors that there was something wrong—serve as powerful reminders. Such events underline the importance of listening to patients and families, especially when they voice concerns. They also illustrate how even world-class institutions can fail when systems break down.

The Price of Preventable Harm

The emotional toll of preventable harm is profound. Stories like Josie King's or the misdiagnosis that led to an unnecessary double mastectomy for Dari Eason, or the MRI-related death of young Michael Columbini, serve as somber reminders. These are not merely data points—they are calls to action. For safety leaders, these events evoke both sorrow and resolve. They highlight the moral and professional imperative to design better systems and support safer care environments.

Structural Elements of the Patient Safety Program

The patient is at the heart of any effective safety program. Surrounding the patient is an ecosystem of clinical teams and services that must function cohesively. These teams are responsible for implementing standardized procedures that reflect the latest evidence-based practices and institutional policies. If a policy governing care is outdated or contradicts new research, it becomes incumbent upon providers to escalate the issue for review and revision.

Shockingly, only an estimated 20% of current evidence-based research is implemented in practice. The remaining 80%—peer-reviewed, clinically validated knowledge—is often ignored due to inertia, habit, or lack of awareness. This discrepancy underscores the urgency of continuous education, process audit, and policy alignment.

A key, and often underappreciated, structural element is communication. The gaps between

services are where miscommunication flourishes and safety erodes. Sentinel events, which include unexpected deaths or permanent harm to patients, are overwhelmingly caused by communication breakdowns among providers.

Speaking Up and Reporting

Central to the safety infrastructure is the active use of one's voice—both verbally and through formal reporting systems. At the DMC, this includes submitting incidents via Midas (soon RL6) and speaking up in real time when issues are identified. Not all incidents require immediate escalation, but those that do must be addressed before documentation begins. It is essential that clinicians not stop at the first sign of dismissal but persist up the chain of command until resolution occurs.

Reporting is not about punishment; it is a mechanism to aggregate data, identify trends, and initiate systemic fixes. The health system depends on these inputs to evolve and eliminate hidden hazards.

Root Cause and Intense Event Analysis

The root cause analysis (RCA) process is at the center of serious event investigation. RCAs at DMC are designed to be non-punitive, solution-oriented, and focused on system learning. They are structured using flowcharting, triage questions, and the hierarchy of action planning—from strongest to weakest interventions.

Repeat events, in which the same error recurs across time or teams, often result from poor dissemination of previous learnings. Preventing recurrence requires forums for sharing insights, strong feedback loops, and institutional memory.

Safety rounds also play an important role. Patient Safety Officers (PSOs) conduct formal rounds, but the opportunity exists for every clinician to engage in informal safety rounding. Identifying just two or three risks a day—be it cluttered equipment, unclear signage, or misaligned policies—can cumulatively lead to a significantly safer environment.

Principles of Just Culture

A key component of the safety framework is the implementation of "just culture." This approach aims to differentiate between human error, at-risk behavior, and reckless behavior in order to ensure proportionate and fair responses.

According to the late Lucian Leape, a pioneer of the patient safety movement, the greatest impediment to safety is the punitive response to error. Instead, those involved in errors should be seen as "teachers" who can illuminate the vulnerabilities of the systems they were working within.

The DMC's just culture algorithm identifies three categories:

- **Human Error**: Genuine mistakes, often resulting from fatigue, distraction, or systemic issues. These call for support, not punishment.
- **At-Risk Behavior**: Knowing the right procedure but choosing a shortcut in the belief it's more efficient or effective. This requires coaching, increased awareness, and structured intervention.
- **Reckless Behavior**: Willful disregard for safety protocols or patient welfare. These rare but serious cases require formal consequences and removal from the clinical environment.

The approach to each category differs. For human error, the leader might "take the person out for coffee" and debrief the process supportively. For at-risk behavior, more formal coaching is necessary. Reckless behavior warrants documentation, remediation, and sometimes disciplinary action.

Promoting Process over Blame

Just culture emphasizes that we must shift from blaming individuals to analyzing systems. When something goes wrong, the first question should not be “who failed?” but “what process failed?”

Every team member should be aware of the key risk points in their workflows—especially in high-intensity environments like trauma. Pausing, even momentarily, to consider the safest course of action should be encouraged and expected.

Leaders must frame each clinical encounter by setting a clear expectation: "I expect anyone in this room to speak up if you see something wrong." This expectation changes the culture from passive compliance to active engagement and shared responsibility.

Human Factors and Systems Thinking

Understanding human behavior and limitations is essential to designing safer healthcare systems. Human Factors Science examines how people interact with tools, environments, and processes—identifying how system design can either support or undermine optimal performance. It seeks to reduce cognitive and physical burdens and to create processes that are intuitive, efficient, and error-resistant.

At the University of Michigan, a dedicated team of Human Factors Engineers actively evaluates equipment, physical space, and workflows. For example, the orientation of OR doors—whether they swing inward or outward—can affect safety during emergencies. The arrangement of surgical instruments can influence speed and accuracy. Even small adjustments, such as the way blood pressure cuffs display readings, can enhance clarity and reduce mistakes.

This kind of thinking extends to all aspects of clinical care. Every interaction between a human and a tool, space, or procedure presents an opportunity for failure—or for improvement. Human Factors Engineering introduces a methodical approach to uncovering these vulnerabilities and redesigning systems for safety and efficiency.

From Human Error to System Symptom

Crucially, human error is not itself the root cause of failure; it is a symptom of deeper system flaws. In this model, when someone says, “I made a mistake,” the immediate reaction should be curiosity, not condemnation. What aspects of the process enabled the mistake? What safeguards were missing?

Modern safety science views human error as the starting point—not the conclusion—of an investigation. Blame-based responses discourage transparency and learning. In contrast, systems-based approaches aim to understand what failed, why it failed, and how to redesign the system so the error cannot easily occur again.

Historical Context of Patient Safety

Although it now feels fundamental to healthcare, patient safety as a formal discipline is relatively new—barely 40 years old. The movement was catalyzed by the landmark 1999 Institute of Medicine report, *To Err is Human*, which exposed the scale of preventable harm in U.S. hospitals and framed safety as a national priority.

This paradigm shift has required a rethinking of everything from how we train clinicians to how we design policy, measure quality, and deliver care. Yet old habits linger—especially the temptation to attribute failure to individuals rather than flawed systems.

To challenge this, safety leaders encourage a mindset of humility and continuous learning. Even experienced providers must remain open to process redesign and new ways of thinking. As technology evolves, so must our capacity to adapt.

Simplifying Processes for Safety

One challenge to clinicians is to design processes so well that even a non-clinician could perform them safely. This is not about de-skilling medicine, but about reducing unnecessary complexity. A well-designed process should make it easy to do the right thing and hard to do the wrong thing.

Such simplification promotes resilience. In emergencies, there may be no time for nuance or judgment. Clear, well-rehearsed protocols—site markings, robust timeouts, role clarity—make the difference between safety and catastrophe. Every opportunity to standardize, automate, or safeguard a process strengthens the system.

Generational Dynamics and Optimism for the Future

The evolving nature of healthcare technology—especially AI—brings both challenge and promise. Younger generations, raised on digital tools, bring a fluency with innovation that is vital for future progress. The key is not to dismiss new ideas, nor to cling to past methods out of habit.

Veteran clinicians, meanwhile, carry the wisdom of experience. Their mentorship is essential in contextualizing emerging tools and guiding cultural change. Safety, like medicine itself, is an intergenerational effort.

The practice of Crew Resource Management reinforces this point. In high-stakes team settings—such as aviation and surgery—leaders are trained to solicit input from the least experienced person first. This prevents groupthink and ensures that every perspective is heard. Silence does not equal agreement; sometimes, the quietest voice offers the most vital insight.

Applying Just Culture in Practice

The just culture framework extends beyond theory into daily operational practice at the Detroit Medical Center. When an error occurs, staff are guided through a structured analysis that distinguishes between types of behavior and their associated responses. This structured response ensures fairness while promoting learning and improvement.

Errors attributable to human fallibility—such as slips due to fatigue—are met with compassion and support. These staff members are not disciplined but instead debriefed, often informally, to assess what in the system failed to support them. Coaching becomes the intervention of choice when staff exhibit at-risk behaviors—knowingly bypassing safety procedures in the name of expediency. In these cases, awareness must be raised about the risks associated with these shortcuts, which may compromise built-in safety nets.

Reckless behavior—conscious disregard for known risks—represents a much smaller proportion of incidents. It is nonetheless serious and must be met with consequences to maintain safety and cultural integrity. These individuals may endanger patients and model unsafe behavior to others. While "punishment" is an uncomfortable term in safety culture, accountability remains a necessity.

Changing Expectations, Promoting Pauses

Clinicians are encouraged to cultivate situational awareness and recognize critical risk points in their workflows. Even in fast-paced environments like trauma surgery, identifying natural pauses for safety checks can make a substantial difference. This might include confirming patient identity, clarifying procedural plans, or simply asking, "Are we sure this is the right next step?"

Leaders should not merely encourage speaking up—they must expect it. By clearly stating, "I expect someone to speak up if they see something wrong," they reinforce the norm that silence is not safety. Empowering everyone in the

room, regardless of title or experience level, builds resilience into the system.

Sentinel Events and Reporting Expectations

DMC policies on sentinel events and safety reporting clarify what events must be documented, how they should be escalated, and how they are handled. A sentinel event is defined as one that results in permanent harm or death and is typically considered preventable. These events demand immediate containment and investigation.

All DMC staff who witness or become aware of such an event are expected to report it through Midas (soon, RL6). Reports must not be printed or referenced in the medical record, to protect confidentiality. Instead, they feed into a system of data aggregation, trend identification, and system reform.

A common misperception is that reporting systems are used punitively. Midas is not "a weapon"—it is a learning tool. The goal is understanding, not blame.

Root Cause Analysis: Timelines and Participation

Once a potential sentinel event is reported, policy mandates that a root cause analysis be initiated within 14 days of the event's discovery. Sentinel events require notification and internal response within 24 hours. This fast turnaround is vital to contain risk, implement interim solutions, and ensure accountability.

Staff involved in the event, including residents, are encouraged to participate in the RCA. While scheduling may be difficult, participation provides a profound learning opportunity. Being involved in the reconstruction of an event fosters awareness, humility, and process insight—qualities that serve clinicians throughout their careers.

Participation also contributes to team culture. When residents are invited into these conversations, they witness firsthand the system-based approach to safety, rather than the simplistic attribution of fault.

From Analysis to Action: Implementing Change

Root cause analysis is only effective when followed by action. The DMC uses the Plan–Do–Study–Act (PDSA) cycle to guide post-event improvements. Containment actions—interim solutions—are deployed immediately after an event to reduce the likelihood of recurrence while the RCA is still in process.

Longer-term solutions are guided by a hierarchy of action strength, with systemic changes (e.g., forcing functions, automation, process redesign) favored over weaker interventions (e.g., education, reminders). The goal is to eliminate reliance on vigilance and memory as the sole safeguards.

Repeat events signal a breakdown in communication and implementation. These failures underscore the need for robust feedback loops and shared accountability across departments.

The Swiss Cheese Model and Error Pathways

A foundational concept in safety systems thinking is James Reason's **Swiss Cheese Model**, which illustrates how multiple layers of defense—though seemingly robust—contain inherent weaknesses or "holes." These holes, representing system flaws or human vulnerabilities, rarely align. But when they do, errors slip through, reaching the patient and causing harm.

The lesson is clear: one defense layer is not enough. Processes must be structured with redundant safeguards and independent checks. Strengthening each "slice" of cheese—each

barrier in the chain—is essential to closing the alignment that leads to preventable events.

These gaps may not appear dangerous in isolation, but system failures often result from the convergence of small, seemingly benign breakdowns. Debriefing after procedures is one critical moment to catch and address these vulnerabilities, even when the outcome was favorable.

Safety as a Science

To advance healthcare safety, we must approach it as a science—rooted in systems theory, data, and structured methodology. The science of safety focuses on:

- Ensuring patients receive the intended therapies
- Maintaining correct technical and adaptive workflows
- Identifying and reinforcing key process steps
- Embedding evidence-based culture into daily practice

Safety science rejects the false dichotomy between strategy and culture. As one oft-quoted maxim reminds us: **"Culture eats strategy for lunch."** In practice, this means that no matter how sound the policy or plan, it will fail if the team's cultural dynamics discourage collaboration, feedback, or accountability.

Recognizing and adapting to these cultural factors is central to any sustainable improvement initiative. Leaders must observe how teams interact, where hierarchies obstruct communication, and how to realign incentives toward shared goals.

Focus on Systems, Not Individuals

Physician behavior and accountability are addressed separately through **Physician Practice Evaluation** (formerly peer review), not through the safety investigation process. This preserves both the integrity of learning and the privacy needed for honest professional reflection.

Root cause analysis remains forward-facing, focusing on how to prevent recurrence rather than who to blame. Menzel emphasized this bifurcation: "If someone wants to analyze the physician's decision-making, that's not what we're here to do. That belongs in practice evaluation, not safety review."

This separation of scopes ensures that patient safety work remains constructive and collaborative, not adversarial.

Communication: Why, Why Now, and What's Expected

Every new policy or process introduced after a sentinel event must be clearly communicated by leadership using three guiding questions:

1. **Why are we changing?**
   — Because harm occurred.
2. **Why are we changing now?**
   — Because the current system failed.
3. **What is expected of us?**
   — Full adoption of the new process and active feedback for continuous improvement.

This clarity of purpose reinforces urgency, builds engagement, and fosters a shared commitment to doing better.

Preparing for the Transition to RL6

The DMC event reporting system will soon migrate from Midas to RL6, a more advanced platform with updated interfaces and analytic

tools. Staff are expected to adapt to this change, and training will be provided.

The goal is to facilitate better data capture, real-time reporting, and actionable insights. This new system will also help shift the perception of reporting from punitive to empowering—allowing front-line voices to shape institutional reform.

Final Reflections: A Culture of Continuous Learning

A culture of safety is built on optimism, intergenerational collaboration, and humility. Despite the pressures facing healthcare, the tools for transformation are in our hands. Emerging clinicians are entering the workforce fluent in digital technology, accustomed to rapid change, and ready to lead the next chapter in safety science. They must be mentored by experienced colleagues whose wisdom and perspective remain irreplaceable.

Effective safety culture values every voice, regardless of hierarchy. Crew Resource Management principles remind us to ask the least experienced person first, ensuring that silence does not conceal concern. Learning flows in both directions: from veteran to novice and back again.

We don't focus on the past. We focus on the future. We ask not 'What should we have done?' but 'What can we do now?'"

Conclusion

The DMC–ACC Patient Safety Program represents a maturing culture of safety—rooted in systems thinking, human factors, and just culture. From advanced reporting tools to evidence-based RCA processes and practical leadership strategies, the program is oriented toward sustainable, team-based improvement. Healthcare is a human endeavor, and error is inevitable. But preventable harm is not. Through deliberate design, open communication, and shared accountability, harm can be reduced—and lives can be saved.

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